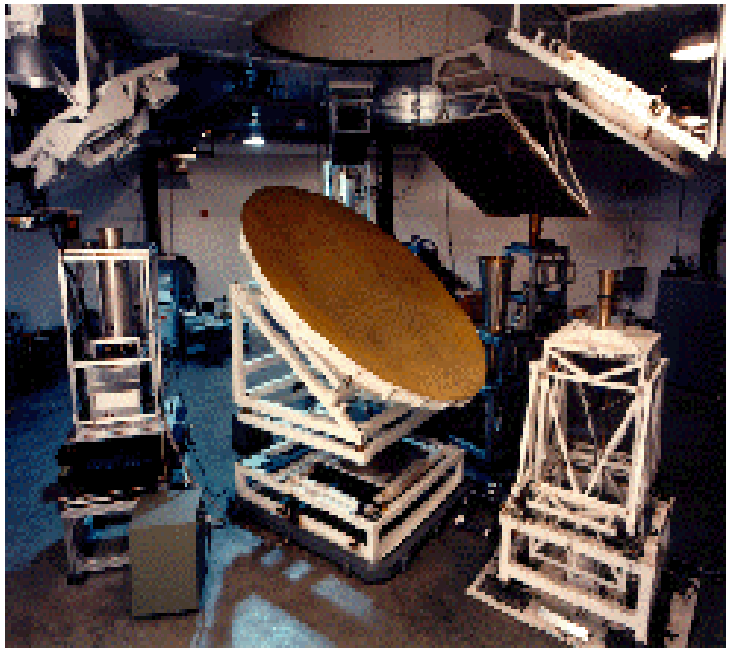
DSS 13 Evolution

- **Overall Objective**
  - –Develop, mantain, manage and provide user support at the Goldstone DSS13 34m Beam Waveguide (BSG) R&D antenna and instrumentation testbed
- **Goals and Products**
  - –Provide test and demonstration environment for
    - New microwave and system instrumentation concepts
    - Automation and remote operations applicable to deep space communications
  - –Support scientific technology development and observations
    - Goldstone Solar System Radar
    - Microwave map
    - Jupiter Patrol
  - –Improve DSS13 - DSN compatibility



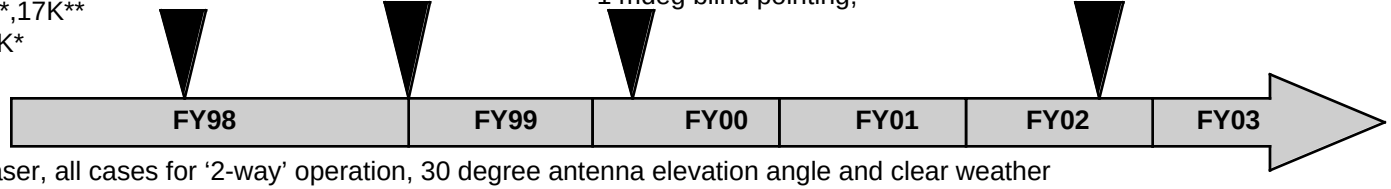
DSS 13 34-m BWG R&D pedestal area

New monitor and control system; remote operations; supporting Kable2; upgrade Ka-band monopulse for radio sources;
X-band antenna eff=70%
Ka-band antenna eff=57%
X-band Top=43K*,17K**
Ka-band Top=86K*

Automated operations;
X-band Top=21K*,17K**
Ka-band Top=52K*, 39K**

1 mdeg blind pointing;

X-band antenna eff=75%
Ka-band antenna eff=70%
X-band Top=15K
Ka-band Top=33K
X-band improved G/T=5 dB
Ka-band improved G/T=5dB



*hemt, **maser, all cases for '2-way' operation, 30 degree antenna elevation angle and clear weather